- $\int_1^2 x^2 - 3x + 1 \, dx = \left[\frac{x^3}{3} - 3\frac{x^2}{2} + x\right]_1^2$

$= \frac{8}{3} - \frac{3}{2} \times 4 + 2 - \left(\frac{1}{3} - \frac{3}{2} + 1\right)$

$= \boxed{-\frac{7}{6}}$

- $\int_0^{\frac{\pi}{2}} \cos(2x) \, dx = \left[\frac{1}{2}\sin 2x\right]_0^{\frac{\pi}{2}} = \frac{1}{2}\sin\pi - \frac{1}{2}\sin 0$

$= 0 - 0 = \boxed{0}$

- $\int_1^e \frac{\ln^4 x}{x} \, dx = \left[\frac{\ln^5 x}{5}\right]_1^e = \frac{\ln^5 e}{5} - \frac{\ln^5 1}{5}$

$= \frac{1}{5} - 0$

$= \boxed{\frac{1}{5}}$

Proprietes : f et g Continue sur $[a,b]$

- $\forall x \in [a,b]$; $f(x) \geqslant 0$ alors $\int_a^b f(x) dx \geqslant 0$.
- $\forall x \in [a,b]$; $f(x) \leqslant 0$ alors $\int_a^b f(x) dx \leqslant 0$.
- $\forall x \in [a,b]$; $f(x) \leqslant g(x)$ alors $\int_a^b f(x) dx \leqslant \int_a^b g(x) dx$
- $\forall x \in [a,b]$; $\left|\int_a^b f(x) dx\right| \leqslant \int_a^b |f(x)| dx$.